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Ballistic Missile Defence, Diplomacy, and North Korea

To South Koreans well within the firing range of a regime and leader of dubious stability and demeanour, it might seem eminently sensible to pursue protection from Kim Jong-un's brandished missiles and nuclear warheads, but those same South Koreans are far from united on hosting American missile defence batteries on their soil. Indeed, they've just elected the presidential candidate most critical of the rushed THAAD (Terminal High Altitude Area Defense) deployment. Whether the new Government revives an all-out "Sunshine Policy" of re-engagement with the North, it should find missile defence a poor substitute for diplomacy.

The forces of Kim Jong-un of North Korea do not now have the capacity to fire nuclear-tipped intercontinental ballistic missiles (ICBMs) on North America (nor, by the way, does or will the US have the capacity to reliably intercept such an attack). So, for now, those most immediately vulnerable to Pyongyang's missiles are the Japanese and South Koreans.¹ As close neighbors of North Korea, they are well aware there is no sure-fire military protection from either its conventional or emerging nuclear threat – but, that said, three separate missile defence systems (Aegis, THAAD, and PAC-3) are now deployed in the region.

The American Aegis (the shield of Zeus, no less) is a ship-based combat system first deployed in 1983. It was given ballistic missile defence (BMD) capabilities through software upgrades, new interceptor missiles, and sensors to guide interceptors to target aircraft- and ship-borne (surface and sub-surface) attack missiles. As with all missile defence systems, it relies on satellites to detect missile launches, which land- and sea-based radars then track to guide the Aegis interceptors to mid-course, exo-atmospheric interceptions. The interceptors rely on non-explosive warheads to collide with and destroy the oncoming warheads.

As of December 2014, according to the Pentagon's Missile Defense Agency (MDA), the US had five cruisers and 28 destroyers equipped as Aegis BMD combatants – and of those 33 ships, 16 were in the Pacific. Japan is operating the Aegis BMD system on four of its KONGO class destroyers and South Korea has cruisers with Aegis tracking capabilities, but not interceptors. The same system is used by NATO in Europe – with some of the interceptors land-based.²

The Terminal High Altitude Area Defence (THAAD) system has just been deployed in South Korea. It is land-based, mobile, and designed to intercept oncoming warheads in their final descent – in the last stages of space flight or within the atmosphere. It has four basic elements: a radar to locate and track an oncoming missile, truck mounted launchers that fire the interceptor missiles (eight per truck), a command and control system, and the interceptors, also tipped with kinetic hit-to-kill warheads that are to collide with an oncoming missile. The system was first activated in the US in 2008 but has not seen combat. In addition to the current deployment in South Korea, the THAAD system was deployed in Guam in 2013.

PAC batteries (the US Army's Patriot Advanced Capability interceptors, operating within the atmosphere) are deployed on military bases in the region. These are air- and missile-defence interceptors designed to protect local forces from short-range attacks.

These regional systems rely on the X-band AN/TPY-2 radar to track warheads, discriminate between warheads and decoys, and send updated data to the interceptors. While radars operating in north Asia on land and at sea (the latter on a self-propelled ocean-going platform) serve regional interceptors, they also pass along tracking data relevant to strategic-range BMD command and control elements, which is at the core of China's concerns about THAAD deployments in the region.

Just how much protection THAAD offers is debated. The US Department of Defense (DOD) points to 36 exo-atmospheric intercept attempts, of which 29 were rated a success. There have been 6 tests of endo-atmospheric intercepts, all of which were rated successful. That makes 42 regional BMD interception tests, of which 35 were successful. But the tests were not conducted under realistic conditions. George Lewis and Ted Postol, two noted BMD experts and critics based at the Massachusetts Institute of Technology, say their independent analysis suggests that in combat most of the "successful" interceptions would in fact have failed to destroy the attacking warheads.³

THAAD is nevertheless generally rated as having a good chance of intercepting North Korean missiles if launched individually or in low numbers. But a key problem is that THAAD would not be effective against a barrage of attacking missile threats. On March 6, 2017, for example, North Korea launched a group of four ballistic missiles⁴, suggesting to analysts that the North Koreans are practicing "swarm-like" missile attacks designed to overwhelm defences. The regime has made a point of trying out simultaneous launches of its most reliable regional missiles, the tried and proven Scud-type missiles⁵ with extended range to reach all parts of South Korea and most of Japan. These multiple launches are not conducted as missile tests but as operational exercises.⁶ Joshua Pollack, a nuclear arms control expert⁷ who also writes for the Arms Control Wonk blog,⁸ explains that "the use of multiple shots, timed ever-more-closely together, appears destined to rehearse saturating a defensive system by presenting it with an overwhelmingly complex radar picture."⁹

Another limiting factor is the range of the THAAD interceptors – about 150 kms – which confines its operations to that radius from each of the system’s two launch units. That leaves rather large parts of the population, including the 25-plus million people living in and around Seoul, beyond its reach.

On balance, THAAD promises to deliver minimal protection while adding significantly to instability. The obvious North Korean response will be the even more determined build up of its inventory of attack missiles to ensure it can overwhelm any regional defence capacity. Adding attack missiles is much less expensive than building credible nation-wide defences in South Korea.¹⁰

Furthermore, THAAD has no capacity against North Korea’s massive concentration of artillery within range of Seoul. According to a US Congressional Research Service assessment, while the US and South Korea would ultimately prevail in another Korean Peninsula war, it would come at great cost. “Analysts estimate that North Korean artillery forces, fortified in thousands of underground facilities, could fire thousands of artillery rounds at metropolitan Seoul in the first hour of a war.”¹¹

THAAD and South Korean Ambivalence

South Koreans are thus not all comforted by THAAD’s presence. On April 26, protesters were camped out to block access to the Seongju golf course 300 kms southeast of Seoul where THAAD was slated to be hosted, when they were jarred awake and scattered before dawn. The US Army had arrived – or, more to the point, it was the arrival of THAAD – months ahead of schedule.¹²

Residents of Seonjgu protest the deployment based largely on local concerns – citing safety fears and the likelihood that THAAD will make them a wartime target.¹³ For many South Koreans, however, concern about THAAD goes well beyond its local impact, representing for them the further entrenchment of South Korean strategic dependence on the US, its primary security partner, while undermining its relations with China, its primary economic partner. South Korea’s trade with China is greater than its trade with the US and Japan combined. And South Korea has already begun to feel Chinese economic consequences of inviting THAAD into the country.¹⁴ “China has reportedly imposed informal economic sanctions against South Korea by limiting tourism, imports of Korean cosmetics, and cancelling K-pop concerts and shutting down a number of South Korean department stores in China.”¹⁵

Also caught off guard by the early deployment were the contenders in the just completed South Korean presidential election.¹⁶ All the leading presidential candidates objected to the speed, stealth, and lack of due process in THAAD’s rushed deployment (pre-empting, for example, a planned environmental assessment). The new, centre-left Democratic President, Moon Jae-in, insisted during the campaign that the decision should have been left to the next administration.¹⁷

A January survey in South Korea showed that more than 50 percent of South Koreans still supported the US THAAD deployment, but the same survey also showed that opposition was growing.¹⁸ THAAD’s limited capabilities and inability to offer any protection to the densely

populated Seoul region, leads many to at least wonder whether the costs to relations with China are warranted by the system's marginal security benefit.

China's Concerns

China had been promoting warmer relations with South Korea, exemplified by President Xi's 2014 visit to Seoul – and his refusal to meet Kim Jong-un in either Pyongyang or Beijing.¹⁹ South Koreans increasingly see economic opportunity in stronger links to China, and Chinese language training is increasingly popular.²⁰

At the same time, there is obviously also concern that China is not doing enough to keep the North in check. China's conundrum is that too much pressure on the North could drive the Kim Jong-un regime even further out of control and risk the chaos of regime collapse, while doing too little to rein in North Korea will drive the south even further into the American security orbit and toward greater security cooperation with Japan. Already concerned about heightened military cooperation among the US, Japan, and South Korea, possibly drawing in the Australians, China does not welcome a growing, coordinated, and hostile military presence on its doorstep.²¹

China has thus joined Russia in opposing "the unilateral and unchecked buildup of anti-missile capabilities by a country or a group of countries to the detriment of strategic stability and international security." China's worries about the reliability of its nuclear deterrent is focused on the BMD radars in Asia, not the interceptors. The US assures China that, while those radars potentially have the capacity to monitor airspace over its territory, they are configured to be in a short-range mode and focused on North Korea, But China fears that the US, even for short periods, could reorient its missile detection and tracking radars to substantially increase their reach into Chinese territory. These regional radars have the capacity to feed data to the strategic ground-based BMD system, with its Alaskan and California interceptors, thus giving that system an enhanced capability for tracking Chinese intercontinental missiles.

And that's not only a Chinese problem. If China regards its second-strike deterrence under threat, now or in the future, it might be induced to abandon its policy of keeping its ICBMs thoroughly de-alerted, with warheads maintained separately from the missiles. Indeed, their current policy is a model that the US and Russia should adopt to reduce the risk of accidental or false alarm launches of their strategic nuclear missiles, but if American BMD intensification leads China to switch to launch-ready deployments, the world will have been made a more dangerous, not a safer, place.²²

In the meantime, North Korea has gone a long way toward reaching its basic goal – namely, enough nuclear warheads and missile capacity to credibly threaten their use and to make the rest of the international community more than a little wary. The Kim regime must now be treated with care and in the short term the status quo works to its advantage, giving it time to add to its warhead stockpile, work at fitting them to missiles, and gradually expanding the range and accuracy of those missiles. The Kim regime is also beginning to entertain alternative economic models and further integration into the global economy, but if the international community remains steadfast, it will made denuclearization a condition of real integration. And only direct

and sustained political engagement will reveal the detailed circumstances and incentives that will move the regime to reduce and ultimately dismantle its nuclear arsenal.

What Happened to Diplomacy?

Inflammatory rhetoric and military action meant to intimidate have become dangerously routine. In just the last 18 months, the decades old conflict has seen the regime of Kim Jong-un explode two nuclear devices, resume and ramp up plutonium production and uranium enrichment, and conduct at least 15 ballistic missile tests, including some launched from a submarine. The United States and Japan (two powers whose past bombings and occupation are well-remembered in the hermit kingdom) join South Korea in multiple military exercises in the region, South Korea and Japan are acquiring destroyers equipped with advanced versions of the Aegis ballistic missile defence (BMD) systems, and, of course, the US has accelerated deployment of its Terminal High Altitude Area Defence (THAAD) unit in South Korea. At the same time, the US and all other states with nuclear arsenals are unrestrained in “modernizing” and in some cases expanding their own nuclear arsenals, counselling only North Korean denuclearization.

Only diplomacy has remained restrained – timid to the point of paralysis, even though it is inescapable that only diplomacy, supported by multilateral economic pressures, can hope to mount a workable response to Pyongyang’s nuclear weapons and missile developments. Military scenarios are practiced, but there is in fact no military response that would not risk horrendous consequences for the region. Daryl G. Kimball of Washington’s Arms Control Association puts it succinctly: “Trump and his advisers need to curb the impulse to threaten military action, which may increase the risk of catastrophic miscalculation. A saner and more effective approach is to work with China to tighten the sanctions pressure and simultaneously open a new diplomatic channel designed to defuse tensions and to halt and eventually reverse North Korea’s increasingly dangerous nuclear and missile programs.”²³

Evidence of the regime’s possible openness to such a reversal came in two interesting North Korean overtures in mid-2016.²⁴ In May of that year, the ruling Korean Workers' Party Congress publicly affirmed it “will not use a nuclear weapon unless its sovereignty is encroached upon by any aggressive hostile forces with nukes, as it had already declared” – in other words, reaffirming its paramount focus on sovereignty and regime survival. The second overture came in a July 6 declaration of its willingness to resume negotiations on denuclearizing the Korean Peninsula, with details on its definition of denuclearization included. Ignored by the US, the statement warranted more attention than it got, according to prominent experts on the region. Demands included in the statement were that the US disclose any and all of its nuclear weapons in and around South Korea, verifiably dismantle such weapons and the military bases to which they were linked, commit never to reintroduce nuclear weapons into the region, and end all threats to use nuclear weapons against North Korea (the same kind of negative security assurances that, by Security Council resolution, are owed to all states that fully disavow nuclear weapons²⁵).

These are familiar demands. Indeed, the Korean Peninsula dispute is something like the Israel/Palestine dispute – both are enduring conflicts for which the basic outlines of a workable political resolution are well known, the problem being that, to date, none of the parties can muster the political will to face the reality confronting them. In addition to North Korea’s 2016 statement, which also included its share of more inflammatory rhetoric, the 2005 joint statement that came out of the six-party talks²⁶ includes the essential accommodations that will have to be made. Those key elements are: agreement on the objective of a verifiably denuclearized Korean Peninsula; elevating the 1953 armistice into a permanent peace agreement (the implications of which are acceptance of the North Korean state and the disavowal of regime change ambitions by the US); economic cooperation with North Korea in energy development, trade, and investment (and initially, at least, a major expansion of humanitarian assistance).

You won’t find many experts who think such a grand bargain is within early reach. At the moment, the North Korean regime is too much of a mystery for the west to have confidence it truly understands the regime’s expectations and interests. And there really is only one antidote to the “mystery” of North Korea, and that is engagement. Engagement doesn’t begin with either agreement or preconditions, nor does it normally begin with formal talks, but multi-level and multi-forum explorations need to become the norm. Informal but structured contacts (Track II diplomacy) among officials and experts, academic-level discussions and conferences, citizen-to-citizen engagement – all are means of breaking through barriers of incomprehension. South Korea’s new President Moon Jae-in has in fact promised to make renewed diplomacy and engagement with the North a priority.

Both China and Russia are disposed toward constructive engagement, albeit in the context of pointed objections to warhead and missile tests when they occur. Both are convinced that persistent attempts to isolate North Korea from the global economy do more to foster a siege mentality in Pyongyang than to encourage adherence to global norms.²⁷ Targeted sanctions, reversible in response to North Korean cooperation, along with diplomatic engagement, are more likely to yield constructive moves than the quixotic lurches of the Trump Administration. While the current stalemate unfortunately affords the North time and opportunity to further develop its nuclear capabilities, it ought also to yield the start of a new round of diplomacy aimed at identifying interim steps toward the ultimate deal²⁸ - an effort that Canada and other like-minded states should be promoting.

Denuclearization of the Korean Peninsula is essential for stability and safety in the region, but it is also essential for nuclear disarmament writ. To leave North Korea indefinitely in possession of a nuclear arsenal, even a modest one by global standards, and thus integrated into mutual deterrence dynamics, is not an acceptable end point. Accepting North Korea with a permanent nuclear arsenal would in effect be tolerating an international non-proliferation regime incapable of preventing a non-nuclear-weapon state that was a party to the Nuclear Non-Proliferation Treaty, and thus legally bound to eschew such weapons, from acquiring nuclear weapons. And one certain consequence of accepting such a major nuclear non-proliferation failure would be to also render progress in nuclear disarmament an ongoing failure.

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Notes

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³ The interceptor missiles installed on Aegis ships are designated Standard Missile 2 Block IV (SM-2 Block IV) and Standard Missile 3 (SM-3). New Versions of the SM-3 are being developed jointly with Japan. A 2010 article in *Arms Control Today* quoted on p.34 of CRS April 6, 2017 report – RL33745.

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